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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/700,990 | 11/04/2003 | Marc I. Glazer | 03848-00132 | 4467 |

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| EXAMINER | |
|---|---|
| FORMAN, BETTY J | |
| ART UNIT | PAPER NUMBER |
| 1634 | |

DATE MAILED: 09/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/700,990 | GLAZER ET AL. | |
| | Examiner | Art Unit | |
| | BJ Forman | 1634 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *04 August 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *37-48* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *39-48* is/are allowed.

6)☒ Claim(s) *37-38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

**FINAL ACTION**

***Status of the Claims***

1. This action is in response to papers filed 4 August 2006 in which claims 37-38 were amended. The amendments have been thoroughly reviewed and entered. The previous rejections in the Office Action dated 22 June 2006 are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed and are discussed below as they apply to the instant grounds for rejection. New grounds for rejection, necessitated by the amendments, are discussed.

Claims 37-48 are under prosecution.

Claims 39-48 are allowed.

Claims 37-38 are rejected.

***Priority***

2. This application is a division of Application No. 09/545,207, now U.S. Patent No. 6,824,866 filed 7 April 2000 and claims priority to Provisional Application 60/128,402, filed 8 April 1999.

Applicant provides support for the instant claims. However, the '402 application does not provide adequate support under 35 U.S.C. 112 for the instant claims because the '402 application does not describe "an unsintered porous layer" as claimed. Therefore, the effective filing date for the instant claims in the filing date of the '207 application i.e. 7 April 2000.

**Response to Arguments**

3. Applicant points to page 2, lines 9-11 and page 80, lines 3-7 of the '402 application for support of the "unsintered porous layer". The passages have been review but are not found sufficient to support the instant claims. The passage at page 2 describes background

information on "sol gels". The passage states that "the porous glass structure optionally can be sintered at elevated temperature". For at least two reasons, this passage does not support "unsintered" as claimed. First, the claims are not limited to "sol gel". Second, the wording of the passage is such that "optionally" could be interpreted to modify "sintered" or "elevated temperature" i.e. optionally sintered or optionally at elevated temperatures. For at least these reasons, the passage does not teach "unsintered porous layers" as claimed. The passage at page 80 describes "mildly sintering". Applicant asserts that because this is an optional final step that is not required in all instances. The passage does not teach or suggest this step is optional. Furthermore, the passage does not teach that this is a final step. In contrast to a final step, the method of substrate preparation continues through at least line 23 and includes numerous additional steps. For these reasons the "unsintered porous layer" is not supported by the '402 application.

The effective filing date for the instant claims is the filing date of the '207 application i.e. 7 April 2000.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Ayers (U.S. Patent No. 5,801,092, issued 1 September 1998).

Regarding Claim 37, Ayers discloses a method of forming a porous substrate comprising providing a substrate material comprising a surface (e.g. wafer), dipping (Column 6, lines 50-52) the substrate into a solution including colloidial silica and a carrier (Fig. 1), the silica having a particle size of about 12-100 nm (Column 5, lines 51-65), and withdrawing the substrate to provide an unsintered porous layer having a thickness of about 0.1-1.0 microns (Column 6, lines 50-56) and a porosity of about 10-90% (i.e. the "about" encompasses a range of 0-100%, therefore the porous layers of Ayers are encompassed by the broadly claimed about 10-90%). Ayers further teach the method as claimed and further teaches the optional step of curing/heating (Column 7, lines 12-13). Furthermore, the instant claim language "comprising" encompasses any additional steps recited in the method.

Regarding Claim 38, Ayers discloses a method of forming a porous substrate comprising providing a substrate material comprising a surface (e.g. wafer), spinning (Column 6, lines 50-52 and Column 8, lines 8-16) the substrate into a solution including colloidial silica and a carrier (Fig. 1), the silica having a particle size of about 12-100 nm (Column 5, lines 51-65), and withdrawing the substrate to provide an unsintered porous layer having a thickness of about 0.1-1.0 microns (Column 6, lines 50-56) and a porosity of about 10-90% (i.e. the "about" encompasses a range of 0-100%, therefore the porous layers of Ayers are encompassed by the broadly claimed about 10-90%).

**Response to Arguments**

6. Applicant further asserts that the '092 reference does not teach or suggest synthesizing a polymer array or an insulating layer that is adapted for polymer attachment. The argument has been considered but is not found persuasive because the claims define an intended use for the substrate i.e. synthesis of high density polymer arrays.

In response to applicant's arguments, the recitation of polymer synthesis has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). In the instant case, the claims do not recite method steps of polymer synthesis or polymer attachment or define the polymer.
The claims define the substrate as adapted for polymer attachment. However, as stated above, the claims do not define the polymer. The '092 reference teaches the substrate is adapted for polymer (e.g. fluorocarbon chain) attachment and they define the fluorocarbon as having a 10 carbon chain (Column 6, line 8). Hence, the reference defines the fluorocarbon as carbon polymers, which are encompassed by the claimed polymers.

7. Claims 37 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Ayers (U.S. Patent No. 6,277,766, filed 3 February 2000).

The Ayers reference is prior art against the instant claims because, as stated above, the effective filing date for the instant claims is 7 April 2000.

Regarding Claim 37, Ayers discloses a method of forming a porous substrate comprising providing a substrate material comprising a surface (e.g. wafer), dipping the substrate into a solution including colloidial silica and a carrier, the silica having a particle size of about 12 nm (Column 6, line 49), and withdrawing the substrate to provide an unsintered porous layer having a thickness of about 0.1-1.0 microns (Column 8, lines 13-31) and a porosity of about

10-90% (i.e. the "about" encompasses a range of 0-100%, therefore the porous layers of Ayers are encompassed by the broadly claimed about 10-90%).

Regarding Claim 38, Ayers discloses a method of forming a porous substrate comprising providing a substrate material comprising a surface (e.g. wafer), dipping the substrate into a solution including colloidial silica and a carrier, the silica having a particle size of about 12 nm (Column 6, line 49), and withdrawing the substrate to provide an unsintered porous layer having a thickness of about 0.1-1.0 microns (Column 8, lines 13-31) and a porosity of about 10-90% (i.e. the "about" encompasses a range of 0-100%, therefore the porous layers of Ayers are encompassed by the broadly claimed about 10-90%).

**Response to Arguments**

8. Applicant asserts that the '766 reference is not prior art for the present application having an effective filing date of April 8 1999. The assertion is noted however, as stated above, the effective filing date for the instant claims is the filing date of the '207 application i.e. 7 April 2000. Hence the '766 reference constitutes prior art.

Applicant further asserts that the '766 reference does not teach or suggest synthesizing a polymer array or an insulating layer that is adapted for polymer attachment. The argument has been considered but is not found persuasive because the claims define an intended use for the substrate i.e. synthesis of high density polymer arrays.

In response to applicant's arguments, the recitation of polymer synthesis has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d

150, 152, 88 USPQ 478, 481 (CCPA 1951). In the instant case, the claims do not recite method steps of polymer synthesis or polymer attachment or define the polymer. The claims define the substrate as adapted for polymer attachment. However, as stated above, the claims do not define the polymer. The '766 reference teaches the substrate is adapted for polymer (e.g. fullerene) attachment and they define the fullerenes as $C_{60}$, $C_{70}$, $C_{72}$ $C_{74}$ $C_{76}$ $C_{78}$ $C_{84}$ $C_{96}$ and beyond $C_{184}$ (Column 6, lines 13-20). Hence, the reference defines the fullerenes as carbon polymers, which are encompassed by the claimed polymers.

Applicant argues that the reference does not teach particle of 12-100nm. The argument has been considered but is not found persuasive because the arguments are not commensurate in scope with the claim. The claims are drawn to particle of "about" 12-100nm. The reference teaches 7nm which is reasonably encompassed by the "about 12" as claimed. The instant specification provides no guidance for interpreting the term "about". Therefore, given the broadest reasonable interpretation, the 7nm taught in the reference is encompassed by the "about 12" recited in the claim.

***Conclusion***

9. Claims 39-48 are drawn to the method of making and method of using the patented porous support of U.S. Patent No. 6,824,866. The porous support of instant Claims 39-48 are commensurate in scope with the patented porous support and are therefore deemed allowable.

10. Claims 37-38 are rejected.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (571) 272-0741. The examiner can normally be reached on 6:00 TO 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is

a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

BJ Forman, Ph.D.
Primary Examiner
Art Unit: 1634
September 13, 2006